Claims

1. A sensor arrangement comprising at least one sensor, at least one integrated signal processing circuit for the measurement of signals from the at least one sensor, and interconnecting wiring between the at least one sensor and the integrated circuit, characterized in that the arrangement comprises a substrate, said substrate forming at least part of said interconnecting wiring and said substrate is further arranged to serve as a functional part of at least one said sensor.

2. An arrangement according to claim 1, characterized in that said integrated circuit is attached on said substrate.

3. An arrangement according to claim 1, characterized in that said substrate is made of flexible film, the flexible film comprising said wiring between the at least one sensor and the integrated circuit.

4. An arrangement according to claim 1, characterized in that the flexible film comprises an electrode of at least one said sensor.

5. An arrangement according to claim 1, characterized in that the flexible substrate comprises wiring for an external connection.

6. An arrangement according to claim 1, characterized in that said interconnecting wires are metallizations on polymer layers.

7. An arrangement according to claim 4, characterized in that it comprises a guard ring in the vicinity of the at least one sensor electrode.

8. An arrangement according to claim 7, characterized in that wiring of said guard ring is perpendicular to the wiring of said sensor electrode.

9. An arrangement according to claim 1, characterized in that the sensor comprises several sensor electrodes and a guard ring for each sensor electrode, and the guard rings are controlled individually according to potential of each sensor electrode.

10. An arrangement according to claim 1, characterized in that the sensor comprises several sensor electrodes that are measured sequentially, and several guard rings, wherein a guard ring of a sensor is controlled time multiplexed to the potential of the sensor for the period of measuring the sensor.

11. An arrangement according to claim 1, characterized in that the sensor comprises several sensor electrodes and guard rings, and all guard rings are controlled into an average potential of the sensor electrodes.

12. An arrangement according to claim 1, characterized in that the surface of said substrate has a curved form in at least two dimensions.

13. An arrangement according to claim 12, characterized in that said form approximates the form of a finger.

14. An arrangement according to claim 1, characterized in that it comprises a fingerprint sensor comprising at least one driver electrode and a row of sensing electrodes.

15. An arrangement according to claim 14, characterized in that said measurement circuit is adapted to measure successive signals while the finger moves in a perpendicular direction in relation to said row of sensing electrodes, for providing a two dimensional matrix of capacitive measurement results from the finger.

16. An arrangement according to claim 1, characterized in that the arrangement further comprises a infrared light source, a infrared light detector and second measurement means for measuring absorption of infrared light from the finger.

17. An arrangement according to claim 16, characterized in that said infrared light source and said infrared light detector are located at opposite sides of a groove designed for a finger.

18. An arrangement according to claim 1, characterized in that said arrangement further comprises a temperature sensor for measuring ambient temperature.

19. An arrangement according to claim 1, characterized in that said arrangement further comprises a humidity sensor for sensing ambient humidity.

20. An arrangement according to claim 1, characterized in that said arrangement further comprises a pressure sensor.

21. An arrangement according to claim 1, characterized in that said arrangement further comprises a skin contact sensor.

22. An arrangement according to claim 1, characterized in that said arrangement further comprises a sensor fixed on the substrate.

23. An arrangement according to claim 1, characterized in that said arrangement comprises a biometric sensor.

24. An arrangement according to claim 1, characterized in that said substrate comprises means for forming a sensor together with a sensor part, wherein said substrate and said sensor part are galvanically separated, and wherein said substrate and said sensor part comprise means for transferring energy and measurement information inductively between said substrate and said sensor part.

25. An arrangement according to claim 24, characterized in that said sensor part is a passive circuit.

26. An arrangement according to claim 24, characterized in that said sensor part comprises an active circuit further comprising means for measuring sensor information and means for transferring the measurement information inductively to said substrate.

27. An arrangement according to claim 24, characterized in that said sensor is a skin contact sensor.

28. A mobile terminal, characterized in that it includes a sensor arrangement according to claim 1.

29. A mobile terminal according to claim 28, characterized in that at least part of the sensor arrangement is encapsulated, such as molded, in the cover of the mobile terminal.

30. A mobile terminal according to claim 28, characterized in that the sensor arrangement comprises a flexible film substrate and the flexible film substrate is encapsulated in the cover of the mobile terminal.